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(FILE 'HOME' ENTERED AT 06:51:16 ON 14 SEP 2005)

FILE 'CA' ENTERED AT 06:51:22 ON 14 SEP 2005

L1 5796 S (DSC OR DIFFERENTIAL SCAN?)AND CATALY?
L2 846 S (DSC OR DIFFERENTIAL SCAN?)AND (MATERIAL OR CATALY?) (5A) (SCREEN?
OR SELECT? OR PICK? OR DISCOVER? OR CHOICE OR CHOOS? OR CHOSEN OR
FIND? OR IDENTIF? OR DEVELOP? OR COMPAR?)
L3 43 S L1 AND(PRESCREEN? OR PRETEST? OR(PRE OR PRELIMIN? OR FIRST OR
INITIAL OR BEGINNING OR STARTING OR INTRODUCT? OR PREPARATORY) (3W)
(SCREEN? OR TEST? OR EXAMIN? OR ASSESS? OR COMPAR? OR SENSOR OR
IDENTIF? OR DETECT? OR DETERMIN? OR MEASUR? OR INVESTIGAT? OR
CHARACTERIZ? OR ANALY? OR ESTIMA?))
L4 56375 S (TEMPERATURE OR CAMERA OR THERMOGRAPH? OR LIGHTOF? OR LITEOFF OR
(LIGHT OR LITE) (W)OFF) (7A) CATALY?
L5 6374 S (TEMPERATURE OR CAMERA OR THERMOGRAPH? OR LIGHTOF? OR LITEOFF OR
(LIGHT OR LITE) (W)OFF) (8A) (MATERIAL OR CATALY?) (5A) (SCREEN? OR
SELECT? OR PICK? OR DISCOVER? OR CHOICE OR CHOOS? OR CHOSEN OR FIND?
OR IDENTIF? OR DEVELOP? OR COMPAR?)
L6 240 S L4 AND(PRESCREEN? OR PRETEST? OR(PRE OR PRELIMIN? OR FIRST OR
INITIAL OR BEGINNING OR STARTING OR INTRODUCT? OR PREPARATORY) (3W)
(SCREEN? OR TEST? OR EXAMIN? OR ASSESS? OR COMPAR? OR SENSOR OR
IDENTIF? OR DETECT? OR DETERMIN? OR MEASUR? OR INVESTIGAT? OR
CHARACTERIZ? OR ANALY? OR ESTIMA?))
L7 18 S L2 AND(MASS SPECTRO? OR SNIF? OR SAMPLER OR SAMPL? (3A) (TUBE OR
TUBING OR CAPILLARY))
L8 55 S L5 AND(MASS SPECTRO? OR SNIF? OR SAMPLER OR SAMPL? (3A) (TUBE OR
TUBING OR CAPILLARY))
L9 443 S L4 AND(SECOND? OR SUBSEQUENT? OR FOLLOW? OR BENCH? OR PILOT? OR
DETAIL?) (3W) (SCREEN? OR TEST? OR EXAMIN? OR ASSESS? OR COMPAR? OR
SENSOR OR IDENTIF? OR DETECT? OR DETERMIN? OR MEASUR? OR INVESTIGAT?
OR CHARACTERIZ? OR ANALY? OR ESTIMA?)
L10 52 S L1 AND(SECOND? OR SUBSEQUENT? OR FOLLOW? OR BENCH? OR PILOT? OR
DETAIL?) (3W) (SCREEN? OR TEST? OR EXAMIN? OR ASSESS? OR COMPAR? OR
SENSOR OR IDENTIF? OR DETECT? OR DETERMIN? OR MEASUR? OR INVESTIGAT?
OR CHARACTERIZ? OR ANALY? OR ESTIMA?)
L11 91 S L2,L5 AND(SECOND? OR SUBSEQUENT? OR FOLLOW? OR BENCH? OR PILOT? OR
DETAIL?) (3W) (SCREEN? OR TEST? OR EXAMIN? OR ASSESS? OR COMPAR? OR
SENSOR OR IDENTIF? OR DETECT? OR DETERMIN? OR MEASUR? OR INVESTIGAT?
OR CHARACTERIZ? OR ANALY? OR ESTIMA?)
L12 27 S L3,L6 AND L9-10
L13 82 S L6,L9 AND(FAST OR RAPID? OR SHORT? OR MICROREACT? OR MICRO
REACTOR)
L14 337 S L3,L7-8,L10-13
L15 214 S L14 NOT PY>2000
L16 3 S L14 NOT L15 AND PATENT/DT AND PY<2003
L17 188 S L15 NOT(RADIATION OR RECRYSTAL? OR FAT OR ASPHALT OR LIQUID
CRYSTAL? OR BWR OR FLOW INJECT? OR LUBRICA?)
L18 26 S L15 NOT L17
L19 2 S L18 AND(AXIAL OR CERAMIC)
L20 163 S L17 NOT(SEAWATER OR TRIETHYLENE OR CROSSLINK? OR PROTEIN OR DL OR
HCOH OR PYROLYSIS)
L21 25 S L17 NOT L20
L22 1 S L21 AND NEW CLASS

L23 145 S L20 NOT(ATACTIC OR EPOXY OR EXTRU? OR MAGNETIC OR ENZYM?)
 L24 18 S L20 NOT L23
 L25 2 S L24 AND(SYNGAS OR EPR)
 L26 126 S L23 NOT(ISOTACTIC OR BALLON OR DEXTRAN OR PEROXIDE OR FERROCEN? OR
 PROPELL? OR PENDANT OR SHOCK WAVE OR STOKES OR ROOFING OR ETCHING)
 L27 19 S L23 NOT L26
 L28 2 S L27 AND CORRELATION
 L29 136 S L16,L19,L22,L25-26,L28

=> d bib,ab 129 1-136

L29 ANSWER 61 OF 136 CA COPYRIGHT 2005 ACS on STN
 AN 122:63006 CA
 TI Vanadia/titania catalysts for selective catalytic reduction (SCR) of
 nitric oxide by ammonia. I. Combined temperature programmed in situ FTIR
 and online **mass spectroscopy** studies
 AU Topsoe, N. Y.; Topsoe, H.; Dumesic, J. A.
 CS Haldor Topsoe Res. Lab., Lyngby, DK-2800, Den.
 SO Journal of Catalysis (1995), 151(1), 226-40
 AB Combined in-situ FTIR and online **mass spectrometric** studies provide
 simultaneous information of the adsorbed species on V2O5/TiO2 catalysts
 and the compn. of reaction products during the SCR of NO. The expts.
 were carried out as temp. programmed surface reaction (TPSR) studies by
 exposing catalysts with preadsorbed NH3 to either pure NO, pure O2, or a
 mixt. of NO and O2. This allowed detailed information to be obtained
 concerning the changes in the concns. and the nature of the surface V:O
 and V-OH species. The TPSR studies in O2 showed mainly NH3 desorption
 and some NH3 oxidn. at high temps. The SCR reaction was obsd. to take
 place during the TPSR studies in both NO and NO + O2, but a greater
 rate was obsd. in the latter case. NH3 reduces the V:O species and
 subsequent reaction with NO results in the formation of reduced V-OH
 species. The results showed that the NO redn. reaction involves the NH3
 species adsorbed on V-OH Bronsted acid sites. Evidence for the
 importance of redox reactions was also found. Sep. temp. programmed
 redn. (TPR) studies in H2 showed that the surface vanadia layer breaks
 up while re-exposing TiOH groups. Subsequent temp. programmed oxidn.
 (TPO) studies in O2 showed this phenomenon to be completely reversible,
 thus providing direct evidence for spreading/redispersion of vanadia on
 titania. The TPR/TPO studies also indicated that the Bronsted acid
 sites essential for the deNOx reaction are assocd. with V5+-OH surface
 sites.

L29 ANSWER 64 OF 136 CA COPYRIGHT 2005 ACS on STN
 AN 121:264654 CA
 TI On the crystal structure of heterogeneous catalysts at reaction-
 conditions: "in-situ" x-ray powder diffraction
 AU Herzog, B.; Ilkenhans, T.; Schloegl, R.
 CS Institut fuer Anorganische Chemie, J. W. Goethe Universitaet,
 Frankfurt/Main, D-60439, Germany
 SO Fresenius' Journal of Analytical Chemistry (1994), 349(1-3), 247-9
 AB In the field of heterogeneous catalysis there is an increasing need for
 the x-ray diffraction of **catalyst** compds. at elevated **temps.**, esp. under
 atmospheres **comparable** to those used in industrial applications. An in-
 situ diffraction system is presented which has a built-in high temp.

chamber suitable for the use of inert (N₂, Ar), oxidizing (O₂), reducing (H₂) or org. atmospheres. This has been combined with a **mass spectrometer** for evolved gas anal. Investigations of the thermal decompn. of silver(I)oxide (Ag₂O) and the behavior of the heteropoly catalyst H₄[PVMol1040] • n H₂O during the oxydehydrogenation of isobutyric acid clearly show the usefulness of the presented app.

L29 ANSWER 91 OF 136 CA COPYRIGHT 2005 ACS on STN

AN 110:45704 CA

TI The use of **DSC** to study the **selective catalytic** reduction of nitric oxide with ammonia

AU Biermann, J. J. P.; Den Daas, H.; Janssen, F. J. J. G.

CS Chem. Res. Dep., Dutch Electr. Supply Undertakings, Arnhem, 6800 ET, Neth.

SO Thermochimica Acta (1988), 133, 169-74

AB **Differential scanning** calorimetry (**DSC**) has the advantage that it allows the chem. reaction rate to be followed at temp.-programmed conditions. In complicated reactions, such as the reaction of NO and NH₃ over a catalyst. It is unwise to employ the heat of the overall reaction as a measure of the extent of the redn. of NO. Therefore, these measurements are accompanied by **mass spectrometric** anal. in order to measure the activity and selectivity of the reaction. The effect of the heating rate on the performance of a V2O₅ on TiO₂/SiO₂ **catalyst** on the **selective** redn. of NO by NH₃ was studied by **DSC** combined with **mass spectrometric** anal. Typical results of the reaction of NO, NH₃, and O₂ over samples of a non-**selective catalyst** (CuO on SiO₂) and the **selective catalyst** (V2O₅ on TiO₂/SiO₂) are presented.

L29 ANSWER 101 OF 136 CA COPYRIGHT 2005 ACS on STN

AN 103:123987 CA

TI Use of Ziegler catalysts for production of LLDPE [linear low-density polyethylene] at high pressure

AU Arribas, J. M.; Delgado, J. A.; Gonzalez, J.; Vargas, L.; Whiteley, K. S.

CS Cent. Invest., EMP, Spain

SO Ingenieria Quimica (Madrid, Spain) (1985), 17(194), 111-13

LA Spanish

AB A scheme was devised for evaluating Ziegler catalysts for the manuf. of linear, low-d. polyethylene (8:92 1-butene-ethylene copolymer [25087-34-7]) in plants designed for the manuf. of low-d. polyethylene with free-radical catalysts. A **first screening** was carried out in a glass reactor at atm. pressure to det. **catalyst** activity at high **temp.** A **second screening** in a stainless steel autoclave at 10-40 bars pressure permitted detn. of the relative activities for polymn. of ethylene [74-85-1] and 1-butene [106-98-9]. Finally, pilot-plant runs were made to produce sufficient product for testing of mech. properties in comparison with com. samples. In connection with the studies a phase diagram was prepd. for the ethylene-butene system and the monomer solubilities in polymer were detd. at high temp. and pressure.

L29 ANSWER 131 OF 136 CA COPYRIGHT 2005 ACS on STN

AN 46:58266 CA

OREF 46:9746i,9747a-e

TI Nickel catalysts for hydrocarbon-steam reaction
 AU Arnold, M. R.; Atwood, Kenton; Baugh, H. M.; Smyser, H. D.
 CS Girdler Corp., Louisville, KY
 SO Journal of Industrial and Engineering Chemistry (Washington, D. C.)
 (1952), 44, 999-1003
 AB The work reported is part of a program of **detailed** lab. **investigation** on the properties of catalysts for the reaction of hydrocarbons with steam. The program, which is being continued, will include investigation of the surface area, porosity, pore size, and particle size of the catalysts. Most of the exptl. work relating to the life and activity of the catalysts was conducted in semimicro reactors. The semimicro reactor, constructed of 1/4-in. Ascoloy pipe, was mounted vertically in an electrically heated furnace. A bundle of 6 reactors could be placed in each furnace. The center of the catalyst bed, which was 1.5 in. long, was at the center of a furnace tube 19 in. long. The **catalyst** was supported by a thermocouple well and **temps.** were read at the bottom of the **catalyst** bed. A 1.5-in. diaspore bed was used for preheating the gases. The saturator was adjusted to give an inlet gas contg. 2.5 vols. of steam per. vol. of dry gas. Catalysts were reduced for 18 hrs. at 1500°F. with H entering the saturator at a rate of 5 l. per hr. After reduction H was replaced with CH₄ and gas samples were taken after CH₄ had flowed for 3 hrs. Analyses were made by the Orsat method. Percentage reaction = $[1 - (\% \text{ CH}_4 \text{ in dry product gas}) / (\% \text{ CH}_4 + \% \text{ CO}_2 + \% \text{ CO in dry product gas})] 100$ and % theoretical reaction = $(\% \text{ reaction}) / (\% \text{ reaction at equil.}) 100$. These formulas were assumed to be valid since C deposition was negligible. At 1300°F., reaction equil. was 94%; at 1400°F. 990%; and at 1500°F. 99.7%. Above 1500°F. percentages reaction and theoretical reaction were essentially equal. Equil. between the product CO, CO₂, H, and the unreacted H₂O was established over the **catalyst** at reaction **temp.**, and the cold product gas retained the high CO to CO₂ ratio established at the high temp. (cf. C.A. 42, 4328g). The catalyst vol., which was usually 1 cc., was calcd. from a measured wt. of the catalyst (16-20 mesh) and the apparent d. detd. on a large vol. of the material. For the test on the effect of high **temp.** on **catalyst** activity, reactors were ceramic tubes 33 in. long and 1 in. inside diam. The catalyst (75 cc., 4-8 mesh) was supported by an inverted porcelain crucible which was held in place by the ceramic thermowell. Results showed that, in general, the catalysts with higher Ni contents had higher activities. The exceptions indicated, however, that other factors are important in detg. catalyst activity. **Rapid** inactivation of the com. catalyst took place above 1900°F.

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STN INTERNATIONAL LOGOFF AT 08:19:29 ON 14 SEP 2005

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Science direct query

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(pub-date > 1954 and pub-date < 2001 and TITLE-ABSTR-KEY(catalyst or catalytic) and TITLE-ABSTR-KEY(prescreen! or screen!)) and prescreen!